

**INTERNATIONAL COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

REC'D 18 SEP 2001


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(PCT Article 36 and Rule 70)

Applicant's or agent's file reference fp12888	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. <b>PCT/AU00/00641</b>	International Filing Date ( <i>day/month/year</i> ) 7 June 2000	Priority Date ( <i>day/month/year</i> ) 8 June 1999
International Patent Classification (IPC) or national classification and IPC <b>Int. Cl. <sup>7</sup> C07K 7/50, 7/56, 7/64; A61K 38/12, 38/08, 38/16; A61P 25/28</b>		
Applicant <b>THE UNIVERSITY OF MELBOURNE et al</b>		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of 3 sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of / sheet(s).
3.	This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the report. II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 8 January 2001	Date of completion of the report 6 September 2001
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer  <b>GAVIN THOMPSON</b> Telephone No. (02) 6283 2240

**I. Basis of the report**

1. With regard to the elements of the international application:\*
- ☐ the international application as originally filed.
- ☒ the description, pages 1 to 71 as originally filed,  
pages , filed with the demand,  
pages , received on with the letter of
- ☒ the claims, pages 73 to 80 as originally filed,  
pages , as amended (together with any statement) under Article 19,  
pages , filed with the demand,  
pages 72 received on 18 July 2001 with the letter of 17 July 2001
- ☒ the drawings, pages 1/19 to 19/19 as originally filed,  
pages , filed with the demand,  
pages , received on with the letter of
- ☐ the sequence listing part of the description:  
pages , as originally filed  
pages , filed with the demand  
pages , received on with the letter of
2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.  
These elements were available or furnished to this Authority in the following language which is:
- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished
4. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.
5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims 1 to 52	YES
	Claims	NO
Inventive step (IS)	Claims 1 to 52	YES
	Claims	NO
Industrial applicability (IA)	Claims 1 to 52	YES
	Claims	NO

**2. Citations and explanations (Rule 70.7)**

The limitation on the molecular weight of the BDNF mimic of claim 1 and its exclusion of compounds derived from NGF, NT-3 and NT-4/5 renders the claims novel and inventive.

Claims 41 to 46 in some contracted states to the PCT may not be considered subject matter for patents as they involve the medical treatment of human subjects.

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CLAIMS:

- 1). A cyclic compound comprising on or more cyclic moieties, which has a biological activity of brain-derived neurotrophic factor (BDNF), and a molecular weight less than 3,000 daltons with the proviso that the compound is not derived from NGF, NT-3 or NT-4/5 or a monocyclic monomeric compound derived from loop2 of BDNF.
- 2). A compound according to claim 1, wherein the compound is monocyclic monomeric, bicyclic dimeric, or tricyclic dimeric.
- 3). A compound according to claim 2, wherein the compound is a bicyclic dimeric compound of general formula (I):

monomeric  
loop 2 sequence-linker-loop 2 sequence  
└──────────┘  
constraint

monomeric  
loop 2 sequence-linker-loop 2 sequence  
└──────────┘  
constraint

(I).

- 4). A compound according to claim 3, wherein the constraint comprises a covalent grouping of atoms.
- 5). A compound according to claim 4, wherein the constraint and the linker may be the same or different.
- 6). A compound according to claim 2, wherein said compound is a tricyclic dimeric compound of general formula (II):

monomeric-linker1-monomeric  
loop 2 sequence-linker2-loop 2 sequence  
└──────────┘  
constraint

monomeric-linker1-monomeric  
loop 2 sequence-linker2-loop 2 sequence  
└──────────┘  
constraint

(II).

- 7). A compound according to claim 6, wherein each of the constraint, linker 1 and linker 2 may be the same or